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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,739	08/17/2001	Ramzi El-Fekih	9209-2	4591
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MYERS BIGEL SIBLEY & SAJOVEC			JUNTIMA, NITTAYA	
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RALEIGH, NC 27627				PAPER NUMBER
			2663	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

AC

Office Action Summary	Application No.	Applicant(s)	
	09/932,739	EL-FEKIH ET AL.	
	Examiner	Art Unit	
	Nittaya Juntima	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 November 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-34, 46-79 and 91-124 is/are pending in the application.
- 4a) Of the above claim(s) 35-45, 80-90 and 125-135 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) See Continuation Sheet is/are rejected.
- 7) Claim(s) See Continuation Sheet is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 17 August 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/16/02, 7/30/02
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

1. This action is in response to the Response to Election/Restriction filed on 11/13/2005.
2. Claims 1-34, 46-79, and 91-124 are pending.
3. Claims 35-45, 80-90, and 125-135 were cancelled.

Claim Objections

4. Claims 2, 47, and 92 are objected to because of the following informalities:
 - in claims 2, 47, and 92, line 5, "comprising" should be changed to "is one of" since one access network cannot comprise a plurality of network elements configured at an edge of the network, see specification, page 8, lines 8-11.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 46, and 91 are rejected under 35 U.S.C. 102(e) as being anticipated by Yaakov (USPN 6,748,433 B1).

Regarding claims 1, 46, and 91, as shown in Figs. 1 and 2, Yaakov teaches a method of managing a service, comprising the steps of:

Obtaining service quality requirements from a client (Service Level Agreement stored in block 30 is signed by the client, col. 4, lines 6-20, and col. 7, lines 39-40).

Collecting quality data from a network (quality parameter data is collected from a network 10, received by a Data Collector 28, and used in calculating the OQS, col. 7, lines 25-31, 35-42, and col. 8, lines 7-20).

Comparing the collected quality data with the service quality requirements to determine if the service quality requirements are satisfied (since (i) the SLA comprises the selected weights and the selected OQS parameter, col. 4, lines 6-20, (ii) OQS is based on the weight functions and parameters p_i , col. 3, lines 8-25, and (iii) the calculated OQS, which is based on the collected quality parameter data, is compared with the SLA's OQS, col. 7, lines 47-51 and col. 8, lines 21-25, therefore, the collected quality parameter data must be compared with the SLA to determine whether the expected level of quality corresponds to the real level).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 2-7, 16-17, 20-21, 47-52, 61-62, 65-66, 92-97, 106-107, and 110-111 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaakov (USPN 6,748,433 B1) in view of Lin et al ("Lin") (USPN 6,405,250 B1).

Regarding claims 2-3, 47-48, and 92-93, as shown in Figs. 1 and 2, Yaakov teaches saving the quality of data quality parameter data in a repository (Data collector 28, col. 7, lines 25-38), analyzing the quality data (CDRs are built and the values of the collected quality parameters p_i are determined for the route under examination, col. 7, lines 35-38), saving the analyzed quality data in the repository (since parameters p_i for the route under examination must be sent to unit 32 for OQS calculation, col. 7, lines 35-44, therefore, the determined parameters p_i for the route examination must be saved in the Data collector 28).

Although Yaakov teaches at least one access network element 14 in Fig. 1 which is one of network elements that are configured at an edge of the network (10) and provide access to the network, Yaakov fails to teach querying the access network element for the quality data.

As shown in Fig. 1, Lin teaches querying at least one access network element (101) to for for quality data (the NMS sends a request to get the update of network status from NE 101, col. 3, lines 26-37, col. 6, lines 12-19, and col. 8, lines 41-48).

Given the teaching of Lin, it would have been obvious to one skilled in the art at the time, the invention was made to modify the teaching of Yaakov to include the teaching of Lin such that querying at least one access network element for the quality data would be included as recited in the claim. The suggestion/motivation to do so would have been to enable the network element to report network status/parameters upon a triggering of an external event, e.g. a request from the NMS, as taught by Lin (col. 6, lines 12-19).

Regarding claims 4, 16, 49, 61, 94, and 106, Yaakov teaches that the network (10 in Fig. 1) comprises a VPN (a VPN reads on routes on network 10 in Fig. 1 that carry the client's traffic based on the signed SLA, col. 4, lines 6-20 and col. 7, lines 5-7), wherein the access network element (14 in Fig. 1) comprising one network interface (input port), computing an availability measure for the VPN (the value of P4 – line availability for the route under examination is determined, col. 3, lines 8-26, 43-46, col. 7, lines 25-38), and computing a delay measure for the VPN (the value of P3 – packet delay for the route under examination is determined, col. 3, lines 8-26, 39-42, and col. 7, lines 25-38).

Yaakov does not explicitly teach that the VPN is an ATM VPN that comprises at least one virtual channel. However, Yaakov further mentioned that the network 10 in Fig. 1 is a PSTN (col. 7, lines 5-7) and that the PSTN and ATM networks are similar in such a way that the routing is accomplished in a fixed way (col. 4, lines 34-36). Further, an examiner notice is taken that an ATM VPN comprising at least one VC is well known in the art for its availability as a service provided by many service providers for transporting voice and data components under subscribed quality levels. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Yaakov and Lin to include an ATM VPN that comprises at least one virtual channel as recited in the claims. The suggestion/motivation to do so would have been to enable the network to accomplish the routing and measuring in a fixed way and to transport the client's voice/data components under subscribed quality levels.

Regarding claims 5, 17, 50, 62, 95, and 107, Yaakov does not teach that the availability/delay measure of the VPN is based on the availability/delay measure of the at least

one VC. However, Yaakov teaches that the availability/delay measure for the VPN, e.g. the value of P4 – line availability and the value of P3 – packet delay are determined for the route under examination (col. 3, lines 8-26, 39-46, col. 7, lines 25-38), and the PSTN 10 in Fig. 1 and the ATM network are similar in such a way that the routing is accomplished in a fixed way (col. 4, lines 34-36 and col. 7, lines 5-7). Further, an examiner notice is taken that an ATM VPN comprising at least one VC is well known in the art for its availability as a service provided by many service providers for transporting voice and data components under subscribed quality levels. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Yaakov and Lin to include that the availability/delay measure of the VPN is based on the availability/delay measure of the at least one VC (e.g. one route) as recited in the claims. The suggestion/motivation to do so would have been to enable the network to accomplish the routing and measuring in a fixed way and to transport the client's voice/data components under subscribed quality levels.

Regarding claims 6, 51, and 96, Yaakov teaches computing for at least one route of the VPN (the VPN reads on routes on PSTN 10 in Fig. 1 that carry the client's traffic based on the signed SLA, col. 4, lines 6-20 and col. 7, lines 5-7) under examination a MTTR (MTTR, col. 3, lines 8-26, 43-46, col. 7, lines 25-38) and a MTBSO (reads on MTBF, col. 3, lines 8-26, 43-46, col. 7, lines 25-38).

Regarding claims 7, 52, and 97, Yaakov does not teach that the computed MTTR and the MTBSO (MTTR and MTBF determined for the route under examination, col. 3, lines 8-26, 43-46, col. 7, lines 25-38) are based on the at least one VC. However, Yaakov further mentioned that the PSTN (network 10 in Fig. 1) and ATM networks are similar in such a way that the

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routing is accomplished in a fixed way (col. 4, lines 34-36). Further, an examiner notice is taken that an ATM VPN comprising at least one VC is well known in the art for its availability as a service provided by many service providers for transporting voice and data components under subscribed quality levels using ATM VC. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Yaakov and Lin to include an ATM VPN that comprises at least one VC such that the MTTR and the MTBSO would be based on the at least one VC as recited in the claims. The suggestion/motivation to do so would have been to enable the network to accomplish the routing and measuring in a fixed way and to transport the client's voice/data components under subscribed quality levels.

Regarding claims 20-21, 65-66, and 110-111, Yaakov teaches that the network (10 in Fig. 1) comprises a VPN (a VPN reads on routes on network 10 in Fig. 1 that carry the client's traffic based on the signed SLA, col. 4, lines 6-20 and col. 7, lines 5-7), wherein the access network element (14 in Fig. 1) comprising one network interface (input port), and computing an error measure including a number of lost packets (the value of P3 – packet loss for the route under examination is determined, col. 3, lines 8-26, 39-42, and col. 7, lines 25-38).

Yaakov does not explicitly teach that the VPN is an ATM VPN that comprises at least one virtual channel, the computed error measure is for a VC, the determined number of lost cells is for the VC and computing a CLR for the VC. However, Yaakov further mentioned that the network 10 in Fig. 1 is a PSTN (col. 7, lines 5-7) and the PSTN and ATM networks are similar in such a way that the routing is accomplished in a fixed way (col. 4, lines 34-36). Further, an examiner notice is taken that an ATM VPN comprising at least one VC carrying traffic in cell is well known in the art for its availability as a service provided by many service providers for

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transporting voice and data components under subscribed quality levels using ATM VC, and computing a CLR for a VC is also well known concept in the art for providing and guarantee QoS in an ATM network. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the teaching of Yaakov to include an ATM VPN that comprises at least one virtual channel and computing a CLR for a VC such that one skilled in the art would arrive at computing error measure including a number of lost cells for a VC and computing a CLR for the VC as recited in the claims. The suggestion/motivation to do so would have been to enable the network to accomplish the routing and measuring in a fixed way and to transport the client's voice/data components under subscribed quality levels.

9. Claims 9, 11-12, 14, 54, 56-57, 59, 99, 101-102, and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaakov (USPN 6,748,433 B1) in view of Lin et al ("Lin") (USPN 6,405,250 B1), and further in view of Riggan et al. ("Riggan") (USPN 5,898,673).

Regarding claims 9, 54, and 99, the combined teaching of Yaakov and Lin does not teach associating an availability threshold with the VPN, and comparing the availability measure for the VPN with the respectively associated availability threshold.

However, in a similar ATM network, as shown in Fig. 5, Riggan teaches associating a bandwidth availability threshold (T) with an ATM network subscribed by a user (step 402, col. 9, lines 19-30) and comparing the bandwidth availability measure (network usage information) for the network with the respectively associated availability threshold (step 410, col. 7, lines 43-52).

Given the teaching of Riggan, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Yaakov and Lin to include the concept of threshold and comparing the measured value with the threshold such that

associating an availability threshold with the VPN, and comparing the availability measure for the VPN with the respectively associated availability threshold would be included as recited in the claims. The suggestion/motivation to do so would have been to enable the network management system to monitor whether the user has exceeded the QoS threshold (col. 4, lines 42-45) and for the network to appropriately treat the incoming user's traffic (col. 4, lines 48-60).

Regarding claims 11-12, 14, 56-57, 59, 101-102, and 104, Yaakov teaches that the network (10 in Fig. 1) comprises a VPN (a VPN reads on routes on network 10 in Fig. 1 that carry the client's traffic based on the signed SLA, col. 4, lines 6-20 and col. 7, lines 5-7), wherein the access network element (14 in Fig. 1) comprising one network interface (input port).

The combined teaching of Yaakov and Lin does not explicitly teach that (i) the VPN is an ATM VPN that comprises at least one virtual channel, (ii) computing a bandwidth utilization measure for the VPN based on at least one VC and comparing the bandwidth utilization measure for the VPN with an over utilization threshold and an under utilization threshold.

(i) Regarding the ATM VPN, Yaakov further mentioned that the network 10 in Fig. 1 is a PSTN (col. 7, lines 5-7) and that the PSTN and ATM networks are similar in such a way that the routing is accomplished in a fixed way (col. 4, lines 34-36). In addition, and an examiner notice is taken that an ATM VPN comprising at least one VC is well known in the art for its availability as a service provided by many service providers for transporting voice and data components under subscribed quality levels using ATM VC. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Yaakov and Lin to include an ATM VPN that comprises at least one virtual channel as recited in the claims. The suggestion/motivation to do so would have been to enable the network to

accomplish the routing and measuring in a fixed way and to transport the client's voice/data components under subscribed quality levels.

(ii) Regarding computing a bandwidth utilization measure for the VPN based on at least one VC and comparing the bandwidth utilization measure for the VPN with an over utilization threshold and an under utilization threshold, Riggan teaches the network management system 206 in Fig. 2 that monitors whether the ATM user has exceeded the agreed-upon bandwidth limit (computing bandwidth utilization measure for the VPN which must be based on at least one VC) and the QoS threshold (comparing the bandwidth utilization measure for the VPN with an over utilization threshold which reads on $>T$ and an under utilization threshold which reads on $<T$).

See col. 4, lines 35-55 and Fig. 5, col. 9, lines 16-30, 43-52).

Given the teaching of Riggan, therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Yaakov and Lin to include the teaching of Riggan as part of the preferred QoS parameters such that computing a bandwidth utilization measure for the VPN based on at least one VC and comparing the bandwidth utilization measure for the VPN with an over utilization threshold and an under utilization threshold as recited in the claims. The motivation/suggestion to do so would have been to appropriately treat the incoming user's traffic according to the bandwidth utilization measurement as taught by Riggan (col. 4, lines 51-59).

10. Claims 18, 63, and 108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaakov (USPN 6,748,433 B1) in view of Lin et al ("Lin") (USPN 6,405,250 B1), and further in view of Riggan et al. ("Riggan") (USPN 5,898,673) and Poulin (USPN 6,545,979 B1).

Regarding claims 18, 63, 108, the combined teaching of Yaakov, Lin, and Riggan does not teach computing a CDV measure and a RTTD measure for the VC.

However, Poulin teaches a method for computing a RTTD (RTD) value which can be used to calculate CDV (CDV) for a VC using an ATM OAM cell with timestamps (col. 1, lines 57-63, col. 2, lines 43-59, col. 4, lines 25-35).

Given the teaching of Poulin, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Yaakov, Lin, and Riggan to include the concept of computing a RTTD value to calculate CDV for a VC such that computing a CDV measure and a RTTD measure for the VC would be included as recited in the claims.

The motivation/suggestion to do so would have been to enable the system to measure and calculate the RTD value of a VC which can be used to calculate CDV of the VC.

11. Claims 23-24, 68-69, and 113-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaakov (USPN 6,748,433 B1) in view of Chen (USPN 5,831, 972).

Regarding claims 23-24, 68-69, and 113-114, Yaakov teaches that the network (10 in Fig. 1) comprises a VPN (a VPN reads on routes on network 10 in Fig. 1 that carry the client's traffic based on the signed SLA, col. 4, lines 6-20 and col. 7, lines 5-7), wherein the access network element (14 in Fig. 1) comprising one network interface (input port).

Yaakov does not explicitly teach that (i) the VPN is an ATM VPN that comprises at least one virtual channel, and (ii) computing a fault measure for the VPN, determining a number of errored seconds and a number of severely errored seconds for the VPN.

(i) However, regarding the ATM VPN, Yaakov further mentioned that the network 10 in Fig. 1 is a PSTN (col. 7, lines 5-7) and that the PSTN and ATM networks are similar in such a

way that the routing is accomplished in a fixed way (col. 4, lines 34-36). Further, an examiner notice is taken that an ATM VPN comprising at least one VC is well known in the art for its availability as a service provided by many service providers for transporting voice and data components under subscribed quality levels using ATM VC. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Yaakov and Lin to include an ATM VPN that comprises at least one virtual channel as recited in the claims. The suggestion/motivation to do so would have been to enable the network to accomplish the routing and measuring in a fixed way and to transport the client's voice/data components under subscribed quality levels.

(ii) Regarding computing a fault measure for the VPN, and determining a number of errored seconds and a number of severely errored seconds for the VPN, in an analogous art, Chen teaches a network management system 15 in Fig. 1 for determining a number of errored seconds and a number of severely errored seconds of a VPN (a VPN reads on SONET network 11 that carries customer's traffic) (col. 3, lines 20-50).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the teaching of Yaakov to include determining a number of errored seconds and a number of severely errored seconds for a VPN as recited in the claims. The motivation/suggestion to do so would have been to enable the network management system to determine performance parameters for any path or connection (col. 3, lines 39-42).

Allowable Subject Matter

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12. Claims 8, 10, 13, 15, 19, 22, 25, 26-34, 53, 55, 58, 60, 64, 67, 70-79, 98, 100, 103, 105, 109, 112, and 115-124 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 571-272-3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nittaya Juntima
January 17, 2006

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RICKY Q. NGO
SUPERVISORY PATENT EXAMINER

Continuation of Disposition of Claims: Claims rejected are 1-7,9,11,12,14,16-18,20,21,23,24,46-52,54,56,57,59,61-63,65,66,69,91-97,99,101,102,104,106-108,110,111,113 and 114.

Continuation of Disposition of Claims: Claims objected to are 8,10,13,15,19,22,25-34,53,55,58,60,64,67,70-79,98,100,103,105,109,112 and 115-124.